

Office Action Summary

Application No.

10/568,591

Applicant(s)

ISHII, TATSUYA

Examiner

/Stephen J. Ralis/

Art Unit

3742

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2006 and 03 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Paper No(s)/Mail Date. _____
- 6) ☐ Other: _____
- 7) ☐ Notices of Informal Patent Application
- 8) ☐ Paper No(s)/Mail Date 11/3/2006

DETAILED ACTION

Priority

1. Applicant's claim for foreign priority benefit of Japanese Patent Application No. 2003-299002, filed 22 August 2003, is acknowledged.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: heater chip A in Figure 1; body 51 in Figure 1. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitations "the head end" in lines 3-4; "the base end side" in 4; "the vicinity" in line 5. ; "the inner side surface" in lines 9-10; "the outer periphery side surface" in line 10. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitations "the protruding length" in lines 1-2; "the base end" in 2. "the apical surface" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claims 4 and 5 recite the limitation "the aforementioned projection portion". There is insufficient antecedent basis for this limitation in the claim.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship between "a temperature-detecting portion" in claim 1 and "the temperature-detecting portion is formed and also welded". It is unclear to whether the structure exists prior to forming and welding or after. Further clarification is required.

Claim 4 recites "multiple thin layers, and" in line 7. Claims are recited as a single sentence. Further clarification is required with delineate whether the claim limitations ends with the recitation of "multiple thin layers" or additional elements are missing.

Claim 5 recites the limitation "can be" in line 3. It is unclear whether the wires "run through and supported" by "a cut" or have the potential of being "run through and supported" by "a cut". Further clarification is required.

5. The claims are replete with such 35 U.S.C. 112, second paragraph issues. The above rejections are exemplary with respect to all of the 35 U.S.C. 112, second paragraph rejections present in the instant case, and the applicant is required to find and correct *all* 35 U.S.C. 112, second paragraph issues outstanding

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith et al. (U.S. Patent No. 5,297,716).

8. Smith et al. disclose a heater chip (soldering tip; see Figure 9) for thermo-compression bonding characterized by comprising a structure wherein a small projection-like thermo-compression bonding portion (central region 100) heated up by conduction resistance is provided on a small plate-like body (see Figure 9), on the head end of a reduced width; a cut (region between legs 80 and 82; see Figure 9) is provided in the body, from the base end side toward the vicinity of the thermo-compression bonding portion (central region 100), both sides of the cut serves as a conduction

terminal portion (column 4, lines 39-43; see Figures 5, 9), a thermocouple for the temperature-detecting portion (wires 20, 22 or 26, 28 or 120,122) are attached together to form a thermocouple arrangement; column 2, line 55 – column 6, line 21)is installed in the vicinity of the thermo-compression bonding portion (see Figures 4-10), therein a projection portion (protrusion 102; two protrusions 130, 132) for thermo-welding a temperature-detecting portion (170) of the thermocouple is provided on the inner side surface of the cut (region between legs 80 and 82; see Figure 9) (see Figures 4-10) or on the outer peripheral side surface of the body (see Figure 2 of prior art).

With respect to the limitations of claim 2, Smith et al. disclose the projection portion (protrusion 102; two protrusions 130, 132) for thermo-welding being preferably provided deep inside the cut (region between legs 80 and 82; see Figure 9) in a protruding condition and placed opposite to the thermo-compression bonding portion (central region 100) (see Figures 4-10).

With respect to the limitations of claim 5, Smith et al. disclose a cut (wider portions of cut in Figures 4, 5, 7 9) being preferably provided along the aforementioned cut so that a pair of conducting wires (wires 20, 22 or 26, 28 or 120,122) to make up the thermocouple can be run through and supported (see Figure 9).

As the reference meets all material limitations of the claims at hand, the reference is anticipatory.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (U.S. Patent No. 5,297,716).

Smith et al. further discloses all of the limitations of the claimed invention, as previously set forth, except for each ridge of an apical surface of the projection portion for welding is covered with the wet-spreading periphery of the temperature-detecting portion; and the length of the projection portion being preferably 0.4 millimeters or more.

However, Smith et al. teach that both joint ends of a pair of conducting wires (wires 20, 22 or 26, 28 or 120,122) are thermally fused (column 4, lines 46-62; column 5, lines 2-12; column 6, lines 15-22) with explicitly reference to wires (26, 28) being melted and fused together (170) either within opening (104) or adjacent to it (column 6, lines 15-22). It is also known in the art the amount of a thermally fused material in a

connection as well as the degree of wet-spreading of the thermally fused material in the connection is base on experimentation and desired characteristics of the weld/apparatus.

To provide the wet-spreading periphery of the temperature-detecting portion covering each ridge of an apical surface of the projection portion for welding would have been a mere engineering expediency as Smith et al. clearly teaches the use of melting two wires together to provide a thermocouple and a bond to central region and it is known in the art the degree of wet-spreading is based on the desired characteristic of the weld/apparatus. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make the length of the projection portion preferably 0.4 millimeters or more, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding the lines 2-3 of claim 4 (describing how the pair of conducting wires are joined, i.e. thermally fused and formed and also welded into), the limitation merely recites a product by process limitation. It is well settled that reciting how a product is made does not further limit the structure of the product itself. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted.).

Prior Art

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,423,950 and U.S. Publication No. 2001/0027962 to Moro are teachings of a heater chip having thermocouple.

U.S. Patent No. 3,991,297 and 4,081,658 to Ammann are more teachings of a heater chip having thermocouple.

U.S. Patent No. 5,864,118 to Backlund is another teaching of a heater chip having thermocouple.

U.S. Patent No. 5,229,575 to Waller et al. is another teaching of a heater chip having thermocouple.

U.S. Patent No. 5,010,227 to Todd is another teaching of a heater chip having thermocouple.

U.S. Patent No. 4,654,507 to Hubbard et al. is another teaching of a heater chip having thermocouple.

Japanese Publication No. JP 63005415 A is another teaching of a heater chip having thermocouple.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Stephen J. Ralis/ whose telephone number is 571-272-6227. The examiner can normally be reached on Monday - Friday, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen J Ralis/
Examiner, Art Unit 3742

/TU B HOANG/
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Stephen J Ralis
Examiner
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SJR
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